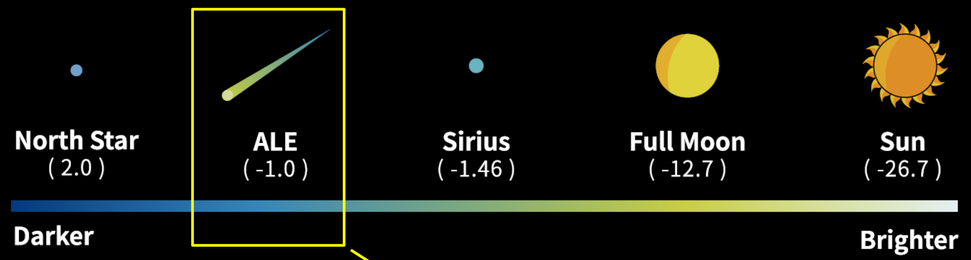

Astro Live
Experiences

ALE - Meteor Showers on Demand

Artificial shooting stars

- Controlled reentry for precise appearance of shooting stars when and where you want them
- Burn brighter, burn longer, and travel slower across the sky than natural shooting stars
- Particle release at 350km, below other satellites
- Complete ablation before 60km, well above the upper limits of aircraft and weather balloons



Bright enough to be seen within major cities like Tokyo

Succesfully tested on the ground in 3 colors

The Sky is Your Canvas
Paint it with
Shooting Stars

More info on http://star-ale.com/

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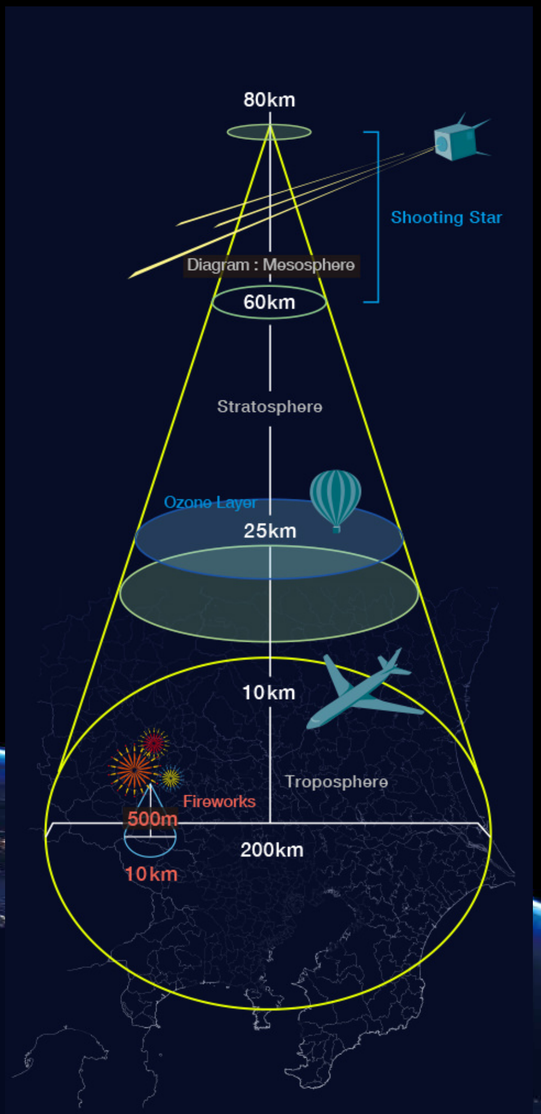
- We launch satellites with 300-400 of our 1cm diameter shooting star particles.
- The particles are released at a rate of 1 particle every 10-15 seconds
- We have a 60 min window for release that ensures our shooting stars appear in the sky above our target area.
  Visibility area of 200km diameter.
- We can release 15-20 particles per satellite passing overhead for a given event
- The particles take around 15-60 min after release to reenter the atmosphere and travel around 1/3-2/3 of an orbit
- The particles reenter the atmosphere at around 7.5km/s and burn up just like natural shooting stars, but BETTER!

http://news.nationalgeographic.com/2016/06/artificial-meteor-showers-japan-satellite-space-science/



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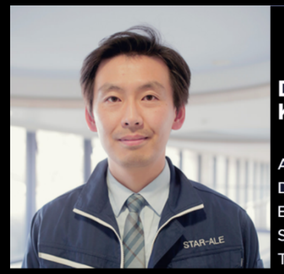
ALE - Meteor Showers on Demand

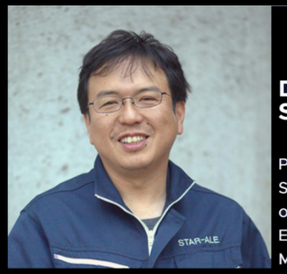
Founder, CEO

Lena founded ALE in September 2011 and serves as its CEO. Prior to ALE, Lena worked in bond investment and private equity at Goldman Sachs. She is also a serial entrepreneur , having founded two companies in the past in the mobile gaming and consulting industries. During her time heading the mobile gaming company, she was selected as a member of the Japan Aerospace Exploration Agency's (JAXA) open lab. Lena received her Ph.D. in Astronomy at the University of Tokyo.



Dr. Toshinori Kuwahara

Assistant Professor, Department of Aerospace Engineering, Graduate School of Engineering, Tohoku University



Dr. Hironori Sahara

Professor, Faculty of System Design, Division of Aerospace Engineering, Tokyo Metropolitan University

Dr. Takeo Watanabe

Associate Professor, Aerospace Course, Department of Mechanical Engineering, Kanagawa Institute of Technology

Dr. Shinsuke Abe

Associate Professor, Department of Aerospace Engineering, College of Science and Technology, Nihon University

Current Development

- **Two satellites in production slated for launch in Q4 2018 and Q2 2019**
- **First event is the Hiroshima Shooting Star Challenge in Summer of 2019**
- **Ongoing research into atmospheric reentry, material ablation and "ignoro-sphere" one of the hardest places to reach**

Future Potential

- **Continuously growing constellation to provide longer more spectacular shows**
- **Multiple launches per year**

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